COUNTY OF LOUDOUN

DEPARTMENT OF BUILDING AND DEVELOPMENT

ZONING ADMINISTRATION REFERRAL

DATE:	January 30, 2008
TO:	Mike Elabarger, Project Manager Department of Planning
THROUGH:	Marilee L. Seigfried, Deputy Zoning Administrator
FROM:	Michelle M. Lohr, Planner
TAX MAP/PARCEL:	/45//10/////2/ **MCPI:** 455-17-3739
CASE NUMBER & NAME:	SPEX 2007-0048 Springdale Montessori School

I. APPLICATION SUMMARY

This referral is in response to the request for comments dated December 11, 2007 regarding a special exception application for a Montessori School inclusive of a Child Day Care Center and Private School. The subject property is zoned AR-1 Agricultural Rural 1 and is administered under the Revised 1993 Loudoun County Zoning Ordinance. In accordance with Table 2-102 of the Zoning Ordinance, both a Child Day Care Center and a School (elementary, middle or high) are permitted by special exception in the AR-1 zoning district.

The following documents have been reviewed that were submitted with the December 11, 2007 Memorandum from Project Manager Mike Elabarger: Information Package, Record of Pre-Application Conference (6/12/07), Statement of Justification dated October 19, 2007, copies of correspondence regarding a waiver request for special exception submission requirements, and Special Exception Plat dated 2 July 2007.

The property is 5.90 acres in size, is zoned AR-1 (Agricultural Rural-1) and is located within the Goose Creek Historic District and portions of the site are located within the minor Floodplain Overlay District (FOD). The current use of the property is as a single-family residence with a number of accessory structures. In 1987 special exceptions were approved to operate a school (SPEX 1986-0009) and a country inn (SPEX 1986-0049). The special exceptions were approved with a condition for a maximum of 50 students, to include a maximum of 20 overnight students who could have overnight accommodations.

As the current proposal differs from that of the approved special exceptions, a new special exception is necessary and is to be reviewed in relation to the regulations of the Revised 1993 Zoning Ordinance.

II. CRITICAL ISSUES

1. The 3 bay parking area to the north of the existing dwelling is not permitted to be constructed within the minor floodplain and must be relocated.

III. SECTION 6-1310 ISSUES FOR CONSIDERATION

2. (A) *Whether the proposed special exception is consistent with the Comprehensive Plan.* Zoning defers to Community Planning in the Department of Planning regarding this issue.
3. (D) *Whether the glare or light that may be generated by the proposed use negatively impacts uses in the immediate area.* Please be advised that Section 5-1504 applies to the proposed use. Reference Section 5-1504 on the special exception plat.

4. (F) *Whether sufficient existing or proposed landscaping, screening and buffering on the site and in the neighborhood to adequately screen surrounding uses.* Section 5-1400 applies to the proposed use and will be reviewed in detail during site plan review.
5. (J) *Whether the traffic expected to be generated by the proposed use will be adequately and safely served by roads, pedestrian connections and other transportation services.* Zoning defers to the Office of Transportation Services regarding this issue.
6. (K) *Whether, in the case of existing structures proposed to be converted to uses requiring a special exception, the structures meet all code requirements of Loudoun County.* Please be advised that the proposed facility must meet all building code requirements.

III. OTHER ISSUES

7. **Proposed use.** The Statement of Justification states that the proposed use is for "quality primary classes for ages of two and a half to eight years and before and after school care." However, the special exception plat only depicts facilities for pre-school and kindergarten. If the proposed use is only for a pre-school and kindergarten with after school care for children up to age 8, it fits within the definition of "Child Care Center." Child care center is defined in Article 8 as *"A licensed establishment which offers care, protection and supervision for compensation to more than nine (9) children at a time during any twenty-four (24) hour period, and then only for part of any twenty-four (24) hour day. A child care center may include nursery schools, kindergartens or other facilities for which the purpose is primarily educational, recreational, or medical treatments."* However, if students above the kindergarten level are to receive their primary instruction at this school, the special exception for a school is necessary.

   As it appears as though the request is for after school care only for post kindergarten age students and not for primary classroom instruction for such children, the proposed use would fit within the definition of "Child care center" and a separate special exception for the use "School (elementary, middle and high) is not warranted.

8. **Section 4-1500. FOD Floodplain Overlay District.** It is noted that the gravel parking area, a 3 bay parking area, and a portion of the play area are located within the minor Floodplain. A maximum of 5,000 square feet of parking is permitted within the minor Floodplain in accordance with Section 4-1505(B)(6). The existing parking was approved in 1988 by the Department of Building and Development. It may continue to be used without further approvals as long as it is not expanded or paved. However, as discussed in the Critical Issues section above, the 3 bay parking area to the north of the existing dwelling is not permitted to be constructed within the minor floodplain and must be relocated. Further, a portion of the existing fenced-in area in the rear of the existing dwelling is located within the minor floodplain. No new playground equipment associated with the Child Care Center use may be located within the area of the minor floodplain.

9. **Section 5-609 Additional Regulations for Child Care Facilities.**
   a. ***Section 5-609(A)(5)*** requires a minimum of 75 square feet per child of outdoor play space. Please demonstrate that this requirement can be met.

   b. ***Section 5-609(B)(a)*** requires that the enclosed play area is to be sited so that all persons entering the play area are within direct line of sight from the child care center classroom area. Demonstrate that this requirement can be met.

   c. ***Section 5-609(B)((1)(c)*** outdoor play areas shall be safely segregated from parking loading, or service areas. Staff notes that an existing stone spring house is located within the proposed playground area. It is recommended that this structure be segregated from the children.

d. ***Section 5-609(B)(2)(b)*** requires a designated pickup and delivery zone at a minimum of 1 parking space per 20 children. Please label such areas on the plat. These designated areas must be located within close proximity to the structure in which the child will be located.

10. **Section 5-1100. Parking.** State that parking will be provided in accordance with Section 5-1100. The parking requirement for Child Care Facilities is 1 space per .2 person in licensed capacity plus one per employee not residing on the premises. If the use is for primary instruction up to and including the kindergarten level and for before and after school care, the use will be a child care center and the parking calculations will be based on such use. If persons will be residing on the premises, additional parking is required based on Table 5-1102. It is not recommended to include the specifics of parking requirements with this special exception request as parking will be verified at the time of site plan review. However, the special exception plat should demonstrate that sufficient parking can be met.

11. **Section 5-1102(A)(4) Commercial Vehicles.** Indicate any commercial vehicles that will be associated with the use. The ordinance requires one off-street parking space for each commercial vehicle that is directly associated with permitted and special exception uses and that is to be parked on the premises during normal business hours.

12. **Section 5-1400. Buffering.** Include a statement that the requirements of Section 5-1400 will be met.

13. **Section 5-1504. Light and Glare Standards.** Provide a note stating that lighting will meet Section 5-1504 Light and Glare Standards.

14. **Section 5-1508(F) Moderately Steep Slopes.** Prior to the issuance of a zoning permit for any use, structure, or activity on a parcel containing moderately steep slopes, a locational clearance must first be obtained. It appears as though proposed improvements to the driveway and entrance may impact Moderately Steep Slopes.

15. **Section 6-701. Site Plan.** Please be advised that a site plan is required in addition to the special exception prior to establishing the proposed use.

16. **Section 6-1902. Certificate of Appropriateness.** As the property is located within the Goose Creek Historic District, Zoning defers to the Department of Planning as to whether the alterations proposed to the structures on the property would require the issuance of a Certificate of Appropriateness by the Historic District Review Committee.

17. **Section 6-1903. Permit for Razing or Demolition.** The special exception plat and Statement of Justification indicate that at least one structure and some fencing are proposed to be demolished. Zoning defers to the Department of Planning to determine if such structure or structures are listed on the inventory of buildings and structures for the historic district. If so, a permit for removal must first be obtained from the Historic District Committee for the removal.

18. **Cover Sheet.** Site Data. Proposed Use. Use Zoning Ordinance terms to describe the proposed use.

19. Provide a tabulation indicating the maximum lot coverage of the proposed uses. Conformance with this requirement will be verified at the time of site plan.

20. Some of the materials submitted with the application package indicate that the existing barn may be renovated for classrooms and/or an apartment. Please clarify the proposed uses of all structures on the property.

21. Is there a play area proposed in association with the classroom to be located in the existing barn?

IV. RECOMMENDATION

The comments included in this referral should be addressed prior to action by the Board of Supervisors.

COUNTY OF LOUDOUN

DEPARTMENT OF BUILDING AND DEVELOPMENT

ZONING ADMINISTRATION 2nd REFERRAL

DATE: March 12, 2008

TO: Mike Elabarger, Project Manager
Department of Planning

THROUGH: Marilee L. Seigfried, Deputy Zoning Administrator

FROM: Michelle M. Lohr, Planner

CASE NUMBER & NAME: SPEX 2007-0048 Springdale Montessori School

TAX MAP/PARCEL /45//10/////2/
MCPI: 455-17-3739

In response to a request for comments dated February 22, 2008, Zoning Administration has reviewed the following received in two parts: (1) February 21, 2008 letter of response to referral agency comments and (2) revised Special Exception plat dated 7/02/07, revised through 2/05/08 were received by the Department of Building and Development on February 25, 2008. A Revised Statement of Justification revised through February 25, 2008 was received by the Department of Building and Development on March 4, 2008.

I. CRITICAL ISSUE - USE:

The only critical issue is in regard to the use designation of the property. As described in the *Revised Statement of Justification*, the proposed facility contains two principal uses that are both permitted by Special Exception in the AR-1 Zoning District: (1) Child Care Center and (2) School. Thus, the Additional Regulations in the Zoning Ordinance for Child Care Centers (Section 5-609) must be met for the preschool/nursery school component of the facility. There are no specific requirements for schools with more than 15 students; however schools with less than 15 students must meet the requirements of Section 5-655.

1. ***School.*** Although the applicant states in the *Revised Statement of Justification* that use of the entire facility fits the definition of a school, the definition of a school includes educational courses beginning with ***kindergarten***. A preschool/nursery school is not included within the definition of school.

   "*An establishment which provides any kindergarten, primary, and/or secondary educational course, but not including an establishment primarily for the instruction of adults, a day care establishment, a child care center, ...*"[emphasis added]

   Prior to issuance of a zoning permit for the school component of the facility, evidence will be required indicating that it meets the Virginia requirements for primary education.

2. ***Child Care Center.*** The preschool component of the use is considered a Child Care Center, as a nursery school (preschool) is included within the definition of Child Care Center:

"A licensed establishment which offers care, protection and supervision for compensation to more than nine (9) children at a time during any twenty-four (24) hour period, and then only for part of any twenty-four (24) hour day. A child care center may include nursery schools, kindergartens or other facilities for which the purpose is primarily educational, recreational, or medical treatments." [emphasis added]

As there is overlap between the two uses in that kindergarten is permitted as a component of both a School and a Child Care Center, the applicant may designate the kindergarten use as either a part of the School use or the Child Care Center use.

II OTHER ISSUES

3. Based on the designation of the proposed establishment as both a Child Care Center and a School, please address the following comments that were identified in the first referral:

   a. Cover Sheet. Site Data. Proposed Use. Use Zoning Ordinance terms to describe the proposed use (School and Child Care Center).

   b. Section 5-609(B)(1)(a) requires the enclosed play area to be sited so that all persons entering the play area are within direct line of sight from the child care center classroom area.

   c. Section 5-609(B)(2)(b) requires a designated pick up and delivery zone at a rate of 1 parking space per 20 children in the Child Care Center use. In calculating the number of required spaces, any fraction up to and including one-half shall be disregarded and fractions of over one-half shall be interpreted as one whole space.

   d. *Please note that a modification to any of the standards contained in Section 5-600 of the Zoning Ordinance may be requested through the Minor Special Exception process.*

4. Section 5-1000 Parking.

   a. The Child Care Center required parking is based on one space per .20 student plus one parking space per employee. In calculating the number of required spaces, any fraction up to and including one-half shall be disregarded and fractions of over one-half shall be interpreted as one whole space. Please note that the ordinance does not make accommodation for employee shifts, thus the number of spaces for employees is based on the total number of employees of the child care use.

   b. The School required parking is based on one parking space per classroom plus one per room used by the students.

5. Section 5-900. Note that the building and parking setback requirements of Section 5-900 apply. In accordance with Section 5-900(A)(11) a 25 foot parking setback applies.

6. In order to properly evaluate the application, it would be helpful to have figures that include a break down of the number of children proposed for the preschool/nursery school program and the number proposed for the school program.

COUNTY OF LOUDOUN

DEPARTMENT OF BUILDING AND DEVELOPMENT

ZONING ADMINISTRATION 3rd REFERRAL

DATE: June 17, 2008

TO: Mike Elabarger, Project Manager
Department of Planning

FROM: Michelle M. Lohr, Planner MML

CASE NUMBER & NAME: SPEX 2007-0048 Springdale Montessori School

TAX MAP/PARCEL /45//10/////2/
MCPI: 455-17-3739

In response to a request for comments dated June 11, 2008, Zoning Administration has reviewed the following received in two parts: (1) June 6, 2008, Revised June 9, 2008 letter of response to referral agency comments and (2) Statement of Justification revised through June 9, 2008, and (4) revised Special Exception plat dated 7/02/07, revised through 2/05/08 and stamped June 6, 2006 by Huntley, Nyce & Associates, Ltd, (4) Springdale Montessori Entrance and Vehicle Stacking Exhibit A, and (5) Springdale Montessori Concept Signing & Pavement Marking Exhibit (B). Staff has reviewed the information provided and has the following comments:

A. The applicant states in the response letter that four designated pick up and delivery spaces are shown on the special exception plat and iterated on the cover sheet. Staff has been unable to determine these four spaces. Please label the spaces and note that they must be in addition to the required parking spaces (identified by the applicant as 30 in the response letter). Also staff has not identified discussion of pick up and delivery spaces on the cover sheet.

B. The applicant states that the ratio of preschool children (daycare) to students in the school program may vary. Please be advised that conditions of the special exception may be placed regarding the total number of day care and total number of school students. The project will be required to be in substantial conformance with the special exception plat. Further, once a site plan is approved, it must conform to the approved site plan as it is used to determine conformance with the Zoning Ordinance and will be based on the number of students in each type of use.

C. The Type 2 planting requirements were revised in December 2007, thus the planting requirements listed on the cover sheet are not accurate. It is recommended that the applicant simply state that the buffering requirements of Section 5-1400 will be met, rather than specifying the specific plantings, unless conditioned by the Special Exception.

D. Zoning defers to Engineering regarding the feasibility of the 4 parallel spaces located along the driveway as the travel aisle is narrow in that location.

E. Section 5-1409(I) allows the required buffer to surround the use itself, rather than to be located on the property line. By indicating the location of the Type 2 buffer yard along the entire property boundary, as it is shown on Sheet 3, the applicant will have to request a new special

exception if it is desired to place the required buffer around the use itself. A note stating that the requirements of Section 5-1400 will be met and verified during site plan review will be sufficient. This will allow the applicant flexibility in the placement of the buffer unless a condition is placed on the application regarding the location and types of plant materials.

F. The parking area may not exceed the overall size of the previously approved parking area. This will be verified during site plan review.

G. The project will be subject to the Parking Lot Landscaping and Screening Requirements of Section 5-1413. This will be verified during site plan review.

County of Loudoun

Department of Planning

MEMORANDUM

DATE: January 25, 2008

TO: Mike Elabarger, Project Manager
Land Use Review

FROM: Kelly Williams, Planner
Community Planning

SUBJECT: SPEX 2007-0048 – Springdale Montessori School

BACKGROUND

The applicants, Benny and Mary Jane Nordahl, are requesting a Special Exception (SPEX) for the operation of a private Montessori school on the subject property, located at 18348 Lincoln Road. The property is on the east side of Lincoln Road (Route 722), south of the Village of Lincoln. The site consists of 5.9 acres and contains numerous buildings including an existing residence (main building) constructed ca. 1839, barn, carriage house, smoke house, springhouse, icehouse and chicken coop.

It is proposed that the school would be housed in the main building and the converted barn. According to the statement of justification, the applicants are proposing school activities including before and after school care for children between the ages of 2 ½ and 8 years old. There is a discrepancy between the Special Exception Plat and the Statement of Justification as to how many students are proposed (117 or 118) which must be clarified. The subject property is zoned AR-1 (Agricultural Residential 1) and governed under the provisions of the Revised 1993 Zoning Ordinance.

According to the application, all buildings will be updated to meet zoning requirements, including updating the heating/cooling system, interior renovations, roof repairs, handicap accessibility, and child friendly restrooms. The driveway will be widened and additional parking provided. An outdoor play area is proposed including a safety fence and landscaping.

A review of County GIS records indicates that forest cover and trees are present on the subject property. There is a small stream that runs through the property along with minor floodplain, and steep slopes. The subject property is located in the Goose Creek Historic Cultural Conservation District.

COMPLIANCE WITH THE COMPREHENSIVE PLAN

The subject property is governed under the policies of the Revised General Plan. The Revised General Plan places the property within the Rural Policy Area. The area is planned for rural economy uses and limited residential development *(Revised General Plan, Policy 3, p.7-15)*.

ANALYSIS:

A. LAND USE

The Rural Economy polices of the Plan support "the creation of a variety of opportunities for rural commercial, industrial, employment, and institutional activities that preserve rural character and that are compatible with the dominant rural land use pattern in the Rural Policy Area (*Revised General Plan, Policy 6, p.7-8*). Such activities include crop and cattle production, the equine industry, vineyards and wineries, horticulture and specialty farm products, farm markets and wayside stands, private schools, hospitality services (bed and breakfasts, country inns, and rural resorts), private camps and parks, rural corporate retreats, etc. (*Revised General Plan, Policy 6, p.7-8*). The Plan specifies that these rural businesses should meet "established performance criteria, including traffic capacity limits, employee limits, site design standards (i.e. buffering, use intensity, siting, architectural features) and pose no threat to public health, safety and welfare" to ensure their compatibility with the character of the surrounding rural area (*Revised General Plan, Policy 6, p.7-8)*. When possible, the proposed uses should be located within existing historic and/or agricultural structures (*Revised General Plan, Policy 6, p.7-8)*.

Private schools are listed as acceptable rural land use activities under Plan policies. The applicant is proposing a private school that will utilize the existing historic and agricultural buildings on-site. As proposed, the private school is compatible with the rural environment and consistent with the Rural Policies of the Plan. Evaluation of the anticipated performance criteria is outlined below.

B. ENVIRONMENTAL RESOURCES

The Green Infrastructure is a collection of natural, cultural, heritage, environmental, protected, passive and active resources that will be integrated in a related system. It includes stream corridors, vegetative landscapes, wildlife and endangered species habitats, and heritage resources (*Revised General Plan, Policy 1, p.5-1 & 5-2*). Development should take place around these elements, incorporating them into the design of the site (*Revised General Plan, text, p. 6-2*). Such an approach places a priority on preserving both sensitive environmental and man-made features.

Elements of the Countywide Green Infrastructure can be found on the subject site, including forest cover, floodplain, steep slopes and heritage resources. Detailed Plan guidance on the treatment of individual Green Infrastructure elements is outlined in the following sections.

1. River and Stream Corridor

The Plan places a priority on the protection of rivers, streams and wetlands; the retention of natural riparian forests and vegetation; and the preservation, buffering, and implementation of performance standards and best management practices as part of a larger water protection strategy. A small stream, areas of steep slopes and a portion of minor floodplain

extends along the northern border and northeastern corner of this proposal. Steep slopes are also located in the area between the house, barn and the southern boundary line.

The special exception plat (page 3 of the submittal) does not delineate the 50-foot management buffer adjacent to the floodplain boundaries as called for in the Revised General Plan *(Policy2, p.5-6)*. It appears that there is an existing driveway, garage and parking area within the floodplain limits. The application is proposing to increase the impact to the green infrastructure elements by expanding the driveway and parking within these areas. The 50' management buffer may be reduced if it is demonstrated that a reduction would not adversely impact the stream corridor resources *(Revised General Plan, policy 5, p. 5-6)*.

Staff recommends the applicant delineate all stream corridor resources, including the 50-foot management buffer adjacent to the floodplain on the special exception plat. Impacts should be minimized and/or mitigated. The parking areas should be relocated outside of the protected area or a request to reduce the buffer limits should be provided demonstrating how a buffer reduction would not adversely impact the stream corridor resources.

2. Forests, Trees, And Vegetation

The County's forests and trees improve air and water quality, offer important habitat for birds, small mammals and other wildlife, and are excellent buffers between communities *(Revised General Plan, text, p. 5-32)*. The Revised General Plan states that "the submittal and approval of a Forest Management Plan will be required prior to any land development. This plan will demonstrate a management strategy that ensures the long-term sustainability of any designated tree save areas" *(Revised General Plan, Policy 3, p. 5-32)*.

The application has provided a tree line delineation of forest on the site. It appears that the playground area, additional parking and expanded driveway will be located in an area designated with tree cover. Staff encourages the applicant to retain and preserve as much of the existing vegetation and trees as possible on the site. If trees are to be removed, staff requests that the applicant submit an inventory of the forested area and a Forest Management Plan as per the policies of the Plan. It is unclear how much of the existing mature vegetation on the property is proposed to be saved and how much additional landscaping is proposed in the required buffers on the site. Special care should be taken during the construction process to protect designated tree save areas from damage (i.e. root trenching and safety fencing). Designated tree save areas may also be used in lieu of buffer requirements.

Staff recommends that the applicant provide more detail regarding potential tree clearing proposed for the playground area, driveway and parking.

3. Historic Resources

The County has developed specific policies for the protection and preservation of historic resources. The policy outlines the County's commitment to protecting structures and other features of particular historical significance in the context of their natural settings while working with landowners to convey the historic value of the resource to the community at large *(Revised General Plan, p.5-35, Policy 8)*. The policy actively promotes the retention and adaptive re-use of historic structures as part of any new development application *(Revised General Plan, p.5-35, Policy 9)*.

The subject property is located within the Goose Creek Historic Cultural and Conservation District, which was created to recognize the architectural and historical significance of this area. New construction or alterations to existing structures on properties located in a County Historic District are subject to evaluation based on the Loudoun County Historic District Guidelines. This property is referred to as the Samuel M. Janney House, and was constructed in 1839 as a boarding school. The proposed preschool will be housed in the main building and an existing barn.

The applicant has been advised that this proposal is subject to review by the Historic District Review Committee in accordance with the Historic District Guidelines based on the proposal to add handicap ramps, stone walkways and fencing and a covered porch on the main building.

C. TRANSPORTATION

The proposed site is accessed from Lincoln Road (Route 722) which is currently designated as a Rural Road in the Revised Countywide Transportation Plan. A traffic impact analysis was submitted with this application to the Office of Transportation Services. The statement of justification indicates that the traffic impact on the traffic flow on Route 722 will be minimal due to the variety of individual schedules offer by the school. Staff questions whether this is an accurate assumption with a proposal of 117 or 118 students attending the school. Lincoln Road may not be able to accommodate all the traffic that may occur with a school that has business hours starting at 7:30 and ending at 6:00 pm. Staff would like more information regarding the schedules to evaluate if this is an accurate assumption.

Staff concurs with the Office of Transportation Services that additional information is necessary to evaluate the Traffic Study. Staff requests additional information regarding the hours of operation and how the individual schedules of the school may alter the impact of the traffic resulting use.

RECOMMENDATION

The applicant is proposing a private school that will utilize the existing historic and agricultural buildings on-site. As proposed, the private school is compatible with the rural environment and consistent with the land use policies of the Plan. However, staff is not able to fully evaluate the proposal until such time the following has been addressed:

- Delineation of the stream corridor resources and the associated 50' management buffer on the Special Exception plat. If the proposed parking and driveway cannot be relocated outside of the buffer, demonstrate how a reduction in the buffer would not adversely impact the stream corridor resources.
- Provide details regarding the potential tree clearing in the area of the proposed playground, driveway expansion and additional parking areas.
- Provide information and justification on the hours of operation and how the school schedules may alter the impact of the traffic resulting from this use.

Staff would be happy to meet with the applicant to discuss these issues.

cc: Julie Pastor, AICP, Planning Director
Cindy Keegan, AICP, Program Manager, Community Planning

County of Loudoun

Department of Planning

MEMORANDUM

DATE: April 1, 2008

TO: Mike Elabarger, Project Manager
Land Use Review

FROM: Kelly Williams, Planner
Community Planning

SUBJECT: SPEX 2007-0048 – Springdale Montessori School, 2nd Referral

BACKGROUND

The applicants, Benny and Mary Jane Nordahl, are requesting a Special Exception (SPEX) for the operation of a private Montessori school on the subject property, located at 18348 Lincoln Road. The property is on the east side of Lincoln Road (Route 722), south of the Village of Lincoln. The site consists of 5.9 acres and contains numerous buildings including an existing residence (main building) constructed ca. 1839, barn, carriage house, smoke house, springhouse, icehouse and chicken coop.

It is proposed that the school would be housed in the main building and the converted barn. According to the statement of justification, the applicants are proposing elementary school and preschool activities including before and after school care for children between the ages of 2 ½ and 8 years old. The subject property is zoned AR-1 (Agricultural Residential 1) and governed under the provisions of the Revised 1993 Zoning Ordinance. The subject property is located in the Goose Creek Historic Cultural Conservation District.

This is the second submission of the application. The applicant has responded to first submission comments by providing a revised statement of justification, response letter and a revised Special Exception plat dated February 22, 2008. The remaining outstanding issues are described below. This referral is intended to be supplementary to Community Planning's January 25, 2008 referral.

COMPLIANCE WITH THE COMPREHENSIVE PLAN

The subject property is governed under the policies of the Revised General Plan. The Revised General Plan places the property within the Rural Policy Area. The area is planned for rural economy uses and limited residential development *(Revised General Plan, Policy 3, p.7-15)*.

OUTSTANDING ISSUES

A. LAND USE

As stated in the first referral, private schools are listed as acceptable rural land use activities under the Rural Policies of the Plan, so long as they meet established performance criteria. The applicant is proposing a private school that will utilize the existing historic and agricultural buildings on-site as encouraged by Plan policy (Revised General Plan, policy 6, p. 7-8). As proposed, the private school application demonstrates a design with minimal site disturbance, utilizes the existing historic buildings and parking onsite, and provides required landscaping and buffering to adjacent properties. The proposal is compatible with the rural environment and consistent with the land use policies of the Plan. There are however, several issues remaining, related to environmental resources and traffic impact as outlined below.

B. ENVIRONMENTAL RESOURCES

1. River and Stream Corridor

The Plan places a priority on the protection of rivers, streams and wetlands; the retention of natural riparian forests and vegetation; and the preservation, buffering, and implementation of performance standards and best management practices as part of a larger water protection strategy. A small stream, areas of steep slopes and a portion of minor floodplain extends along the northern border and northeastern corner of this proposal. Steep slopes are also located in the area between the house, barn and the southern boundary line.

Staff recommended the applicant delineate all stream corridor resources, including the 50-foot management buffer adjacent to the floodplain on the Special Exception plat as called for in the Revised General Plan *(Policy2, p.5-6)*. The applicant responded that the 50' management buffer is no longer required by the Zoning Ordinance. While that point is taken, the Revised General Plan continues to call for the buffer to be included on development plans. The applicant is seeking a Special Exception for this use which in accordance with Section 6-1310 of the Revised 1993 Zoning Ordinance, will be considered for consistency with the Comprehensive Plan.

Staff continues to recommend the applicant delineate all stream corridor resources, including the 50-foot management buffer adjacent to the floodplain on the Special Exception plat. Impacts should be minimized and/or mitigated. The parking areas should be relocated outside of the protected area or a request to reduce the buffer limits should be provided demonstrating how a buffer reduction would not adversely impact the stream corridor resources.

2. Forests, Trees, and Vegetation

It was recommended in the first referral that the applicant provide more detail regarding potential tree clearing proposed for the playground area, driveway and parking. The applicant's response offers a condition of approval to consult with the County Forester at the time of site plan review, for any tree, scrub or debris clearing of the site. The applicant is proposing only minimal clearing on the site.

Staff agrees that consultation with the County Forester at the time of site plan review is an acceptable condition of approval to address this issue.

3. Historic Resources

The applicant has been advised and acknowledges that this proposal is subject to review by the Historic District Review Committee in accordance with the Historic District Guidelines based on the proposal to add handicap ramps, stone walkways and fencing and a covered porch on the main building.

C. TRANSPORTATION

The proposed site is accessed from Lincoln Road (Route 722) which is currently designated as a Rural Road in the Revised Countywide Transportation Plan. A revised traffic impact analysis was submitted with this application to the Office of Transportation Services and VDOT. Upon review of this submittal it was recognized that the traffic analysis indicates that Lincoln Road (Route 722) operates at a LOS "B" or better with future traffic conditions for the two lane portions of the road. However, both VDOT and the Office of Transportation Services (OTS) have indicated that there are issues related to the location of the one lane bridge on Lincoln Road and the sites entrance (VDOT referral dated March 5, 2008 and OTS referral dated March 25, 2008).

The Plan specifies that rural businesses should meet established performance criteria, including traffic capacity limits and pose no threat to public health, safety and welfare to ensure their compatibility with the character of the surrounding rural area (Revised General Plan, Policy 6, p.7-8). In order to be in conformance with Plan policy, the outstanding transportation issues must be resolved.

RECOMMENDATION

The applicant is proposing a private school that will utilize the existing historic and agricultural buildings on-site. As proposed, the private school is compatible with the rural environment and consistent with the land use policies of the Plan. However, staff is not able to support the application until such time as the following issues have been resolved:

- Delineation of the stream corridor resources and the associated 50' management buffer on the Special Exception plat. If the proposed parking and driveway cannot be relocated outside of the buffer, demonstrate how a reduction in the buffer would not adversely impact the stream corridor resources.

- Commit to working with the County Forester on potential tree clearing on-site prior to site plan approval.

- Resolve the outstanding transportation issues as outlined in the VDOT referral dated March 5, 2008 and OTS referral dated March 25, 2008.

cc: Julie Pastor, AICP, Planning Director
Cindy Keegan, AICP, Program Manager, Community Planning, via e-mail

Mike Elabarger - Springdale Montessori

From: Kelly Williams
To: Elabarger, Mike
Date: 6/18/2008 12:10 PM
Subject: Springdale Montessori
CC: Keegan, Cynthia

Mike,

Upon review of the applicants 3rd submittal dated June 6, 2008, Community Planning offers the following comments:

Comment 1: Stream Corridor Resources

The applicant has responded that the stream corridor has been depicted on the plats. Minor floodplain has been shown, however, the 50' river and stream corridor management buffer, as called for in the Revised General Plan, has not been addressed. Staff understands that the current driveway and parking have been in existence for many years and concurs with the applicant that they are not adversely impacting the stream corridor. A condition of approval limiting the disturbance within the river and stream corridor area, to what is shown on the Special Exception Plat, is recommended. The 50' management buffer needs to be added to the plan to depict the boundaries of the entire river and stream corridor resources as called for in the Plan.

Comment 2: Tree Clearing

The applicant has agreed to work with the County Forester prior to site plan approval. Staff recommends a condition of approval to implement this agreement. Issue resolved.

Comment 3: Transportation

The applicant has worked with VDOT and OTS to resolve the transportation issues. Staff has no further comments if all VDOT and OTS comments have been satisfied.

Kelly Williams
Planner, Community Planning
1 Harrison Street, 3rd Floor
P.O. Box 7000
Leesburg, VA 20177-7000
Phone (703) 771-5496
Fax (703) 777-0441

A-015

DEPARTMENT OF BUILDING AND DEVELOPMENT

COUNTY OF LOUDOUN

MEMORANDUM

DATE: January 23, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: William Marsh, Environmental Review Team Leader

CC: Kelly Williams, Community Planner

SUBJECT: SPEX-2007-0048 Springdale Montessori School

The Environmental Review Team (ERT) has comments pertaining to the current application, as follows:

Regarding building design

1. Consider incorporating green building elements into renovations of two existing structures, including water and energy efficient design and appliances. The applicant describes a possible geothermal heating and cooling system that is a promising energy conservation feature. Additional measures like EnergyStar rated appliances, windows, insulation, and illumination would complement the geothermal system and minimize electricity demand. Further, proposed gardening and other water intensive landscaping can be irrigated by rainfall that is harvested from existing rooftops. Water conservation also supports energy conservation by reducing well and septic pump demand, and Loudoun County Public Schools and the Office of Capitol Construction are currently including no-flow urinals and low flow or dual flush toilets in public facility design. Please consider these design options, and also consider an application for certification by Leadership in Energy and Environmental Design for existing buildings.

   A green building commitment is consistent with the General Water Policies supporting long-term water conservation (Policy 1, Page 2-20), the Solid Waste Management Policies supporting waste reduction, reuse, and recycling (Policy 2, Page 2-23). Furthermore, the County encourages project designs that ensure long-term sustainability, as discussed in the Suburban Policy Area, Land Use and Pattern Design text (Page 6-2).

Regarding floodplain management

2. The application includes possible alteration of the minor floodplain, including new parking spaces and a fence surround a play area. Staff recommends removing or minimizing these uses as follows:

   - Parking is allowed in the minor floodplain given sufficient best management practices design and minimization of fill, consistent with Revised 1993 Zoning Ordinance (ZO) Section 4-1505(B)(6). But other locations outside of the floodplain can provide this parking space, including the other proposed driveway location. Consider consolidating the proposed parking spaces outside of the floodplain.
   - Consider moving existing utilities like propane out of the minor floodplain.
   - Consider not adding fill in the playground area that is located in minor floodplain.

   Revised 1993 ZO Section 4-1507 lists floodplain management standards that apply to special exception applications. Staff believes that these suggestions are consistent with these standards.

Regarding habitat preservation

3. Consistent with checklist item K.12 for special exception plats, please include inventory of evergreen trees with calipers of 14 inches or larger and deciduous trees with calipers of 22 inches or larger. Also address how the extent of development and landscaping could affect the viability of these trees.

4. The presence of drains, Class IV hydric soils, minor floodplain, and wetland areas as predicted by the Loudoun County Predictive Wetlands Model indicates the potential for areas of the property to be classified as jurisdictional waters and wetlands. A wetland delineation verified by the U.S. Army Corps of Engineers (Corps) must be provided on the plat to ensure that 1) the proposed development layout meets the avoidance and minimization criteria of Section 404 of the Clean Water Act and Section 9VAC25-210-115A of the Virginia Water Protection Permit Regulations and 2) the proposed impacts will be permitted. This information is also necessary to asses potential impacts to water quality as required in Section 6-1310.H (Issues for Consideration) of the Revised 1993 Zoning Ordinance.

DEPARTMENT OF BUILDING AND DEVELOPMENT

COUNTY OF LOUDOUN

MEMORANDUM

DATE: March 28, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: William Marsh, Environmental Review Team Leader

CC: Kelly Williams, Community Planner

SUBJECT: SPEX-2007-0048 Springdale Montessori School

The Environmental Review Team (ERT) has comments pertaining to the current application, as follows:

Regarding building design

1. Staff appreciates the applicant's interest in green building design provided that it does not detract from existing historic structures. Staff requests that the applicant complete a LEED for New Construction (NC) or Existing Building (EB) score-card and discuss design options with county staff. As mentioned in the first referral, a clear and verifiable commitment to LEED design standards is in the applicant's long term operational interests and the county's sustainability goals. Based on visits to other schools in this region, including TC Williams High School in Alexandria and Sidwell Friends in the District of Columbia, students' exposure to, and measurement of, design efficiencies related to LEED are powerful learning tools.

Regarding floodplain management

2. Staff appreciates the applicant's parking adjustments to minimize alterations in the floodplain for parking. Staff requests consideration of a condition of approval that would remove existing propane tanks from the minor floodplain and avoid any alteration of topography within the playground area.

Regarding habitat preservation

3. ERT requested a tree inventory in the first referral. The intent was to verify that the critical root zones of existing trees would not be disturbed with this development. Prior to consideration by the Planning Commission, staff requests a site visit with the applicant and County Urban Forester to verify specimen tree locations and that avoidance of these trees is feasible.

4. Regarding wetland and stream disturbance, staff points out that the proposed utility crossing to drainfields could disturb stream or wetland habitat, along with possible work adjacent to the playground. Further, verification of federal and state permits is needed before ground can be disturbed for this development, consistent with Section 5.310.B of the Facilities Standards Manual. Staff reiterates its request for a wetland delineation verified by the U.S. Army Corps of Engineers (Corps) to be provided on the plat to ensure that 1) the proposed development layout meets the avoidance and minimization criteria of Section 404 of the Clean Water Act and Section 9VAC25-210-115A of the Virginia Water Protection Permit Regulations and 2) the proposed impacts will be permitted. This information is also necessary to asses potential impacts to water quality as required in Section 6-1310.H (Issues for Consideration) of the Revised 1993 Zoning Ordinance.

Staff is available to meet with the applicant to resolve these issues.

DEPARTMENT OF BUILDING AND DEVELOPMENT

COUNTY OF LOUDOUN

MEMORANDUM

DATE: June 26, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: William Marsh, Environmental Review Team Leader

CC: Kelly Williams, Community Planner

SUBJECT: SPEX-2007-0048 Springdale Montessori School

The Environmental Review Team (ERT) has comments pertaining to the current application, as follows:

Regarding building design

1. Staff appreciates the applicant's interest in green building design provided that it does not detract from existing historic structures. As previously requested, staff requests that the applicant complete a LEED for New Construction (NC) or Existing Building (EB) score-card and discuss design options with county staff. As mentioned in the first referral, a clear and verifiable commitment to LEED design standards is in the applicant's long term operational interests and the county's sustainability goals. ERT is available to meet with the applicant prior to a scheduled Planning Commission briefing.

Regarding floodplain management

2. Staff requests a condition of approval that would remove existing propane tanks from the minor floodplain and avoid any alteration of topography within the playground area. Removing the propane tanks is consistent with Section 4-1507(B), where the proposed use will not increase the danger that materials would be swept downstream to the injury of others.

Staff is available to meet with the applicant to resolve these issues.

A-020

County of Loudoun

Office of Transportation Services

MEMORANDUM

DATE: January 22, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: Art Smith, Senior Coordinator, Planning and Development

SUBJECT: **SPEX 2007-0048 Springdale Montessori School**
First Referral

Background

The applicant is seeking approval of a special exception to allow a private Montessori School in the AR-1 Zoning District. The proposed private school would be located on a 5.9 acre site on the east side of Route 722, Lincoln Road, south of the Village of Lincoln. The applicant proposes to convert an existing building to the school. Please see Attachment 1, Project Vicinity Map.

Existing, Planned and Programmed Road Improvements

Route 722, Lincoln Road, along the project's frontage is a two-lane paved road with narrow shoulders. The applicant's traffic study does not document an existing typical section for Route 722, and should. The Countywide Transportation Plan (CTP) considers Route 722 to be a local road and as such does not specify any improvements.

Existing and Forecasted Traffic Volumes and Service Volumes

Existing traffic volumes and forecasted site trip generation are shown in Attachment 2. Please note existing traffic volumes will need to be adjusted based on Issue 1 below. Existing and forecasted service levels in the applicant's traffic study are shown in Attachment 3. Please note these will need to be adjusted based on Issues 2 and 3 below. The study's current forecast shows LOS A in both peak hours.

A-021

Transportation Issues

1. The traffic volumes in the applicant's traffic study do not appear to have been taken on a regular school day as they should have been. Please correct as appropriate.

2. The applicant's buildout forecast is 2008/2009. It is clear the school will not be operational in 2008. Given the steps needed to begin school operations (if approved) it appears a realistic buildout year is 2010. Please respond.

3. The most appropriate LOS evaluation for this site would be link level of service based on the current typical section for Route 722. Please provide.

4. The applicant should provide a dedication of right-of-way 25 feet from the existing center line of Route 722 for future road improvements.

5. Entrance improvements consistent with VDOT requirements should be provided.

6. Any turn lane improvements required by VDOT should be provided.

7. If the link LOS evaluation determines current lane width on Route 722 is not adequate to service the school, appropriate frontage improvements should be provided.

8. OTS is interested in learning the views of Comprehensive Planning and local residents living along the road in the provision of a multi-purpose trail along Route 722. We have no recommendation at this time.

Conclusion

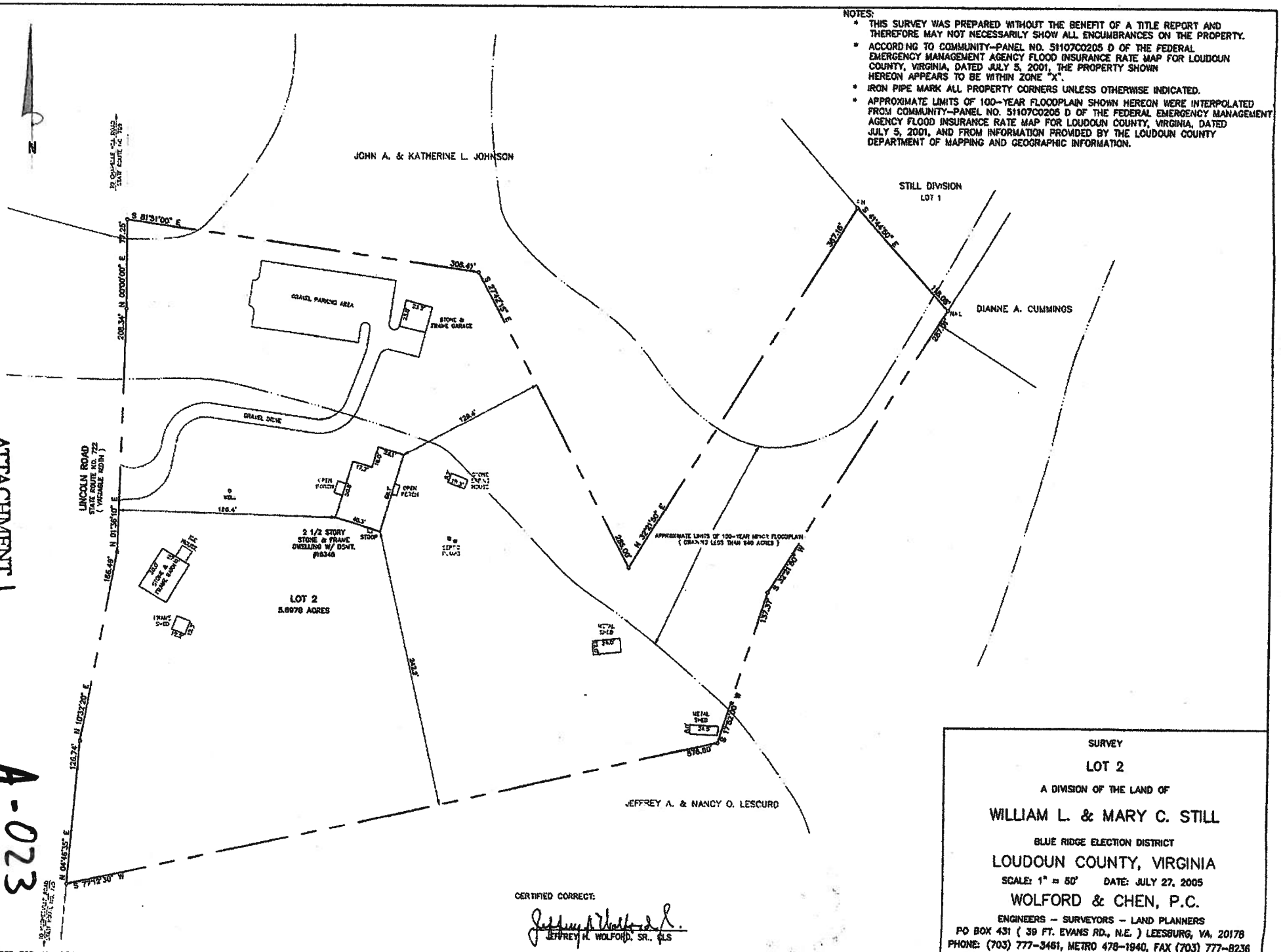
OTS will offer a recommendation once we have reviewed the applicant's responses to our comments and appropriate revisions are made to the traffic study.

AJS/llm
cc: Andy Beacher, Assistant Director/Highway Division Chief
Lou Mosurak, Senior Transportation Planner

Attachments

1. Project Vicinity Map
2. Existing Traffic Counts (subject to revision)
3. Existing and Forecasted Service Levels (subject to revision)

A-022



ATTACHMENT 1

A-023

WELLS + ASSOCIATES, INC.
TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

MEMORANDUM

TO: Mr. George R. Phillips, AICP
Loudoun County Office of Transportation Services

COPY: Mr. Robert Sevila
Sevila, Saunders, Huddleston & White

Ms. Mary Jane Nordahl
Springdale

FROM: Wan Chong
Christopher Turnbull

DATE: September 14, 2007

SUBJECT: Springdale Montessori School Traffic Memorandum
Loudoun County, Virginia

INTRODUCTION

Springdale is seeking a Special Exception (SPEX) to permit a 118 student Montessori School just south of the Village of Lincoln in Loudoun County, Virginia. Access to the school will be provided via an existing driveway along Lincoln Road (Route 722).

The site is generally located south of the Village of Lincoln along the eastern side of Lincoln Road (Route 722), south of Chappelle Hill Road and north of Hughesville Road. The site is currently improved with a house and a barn. The applicant proposes to convert the existing building into a Montessori School.

For the purposes of this analysis, the school was assumed to open in 2008/2009.

This traffic analysis was conducted in accordance with Loudoun County's Facilities Standards Manual (FSM) and through discussions with the Loudoun County Office of Transportation Services (OTS). The traffic study would review the site entrance located on Lincoln Road (Route 722).

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A-024

This memorandum was prepared to demonstrate that the local roadway network could accommodate the proposed Springdale Montessori School traffic volumes.

ANALYSIS

Public Road Network

Regional and local access to the site is provided by Lincoln Road (Route 722).

Lincoln Road (Route 722) in the vicinity of the site is a rural two-lane undivided, scenic byway connecting to the Village of Lincoln and the Town of Purcellville to the north. No turn lanes are provided at the intersection of Lincoln Road (Route 722) and the Site Entrance.

Site Access Concept

Access to the Springdale Montessori School is proposed via the existing full movement "T" intersection from Lincoln Road (Route 722). By Virginia vehicle code, motorists exiting the driveway must stop before entering the main road.

Existing Traffic Counts

Existing AM and PM peak hour traffic counts were completed by Wells & Associates on Tuesday, June 19, 2007 at the Lincoln Road (Route 722)/Site Entrance intersection.

The traffic counts are included in Attachment A and summarized in Table 1.

The counts indicate that the AM peak hour occurs between 7:45 and 8:45 AM and the PM peak hour occurs between 4:00 and 5:00 PM. Lincoln Road (Route 722) presently carries 154 AM peak hour trips and 136 PM peak hour trips in the vicinity of the site. Sixty-eight (68) percent of all motorists travel north in the morning and sixty-three (63) percent travel south in the evening.

A-025

Table 1
Springdale Montessori School
Lincoln Road (Route 722)/Site Entrance
Traffic Forecast Summary

Weekday AM Peak Hour

Traffic Component	Southbound Lincoln Road(Route 722) Through	Southbound Lincoln Road(Route 722) Left	Westbound Site Entrance Right	Westbound Site Entrance Left	Northbound Lincoln Road(Route 722) Right	Northbound Lincoln Road(Route 722) Through
Existing Traffic Volumes	49	0	0	1	0	104
Growth of Existing	4	0	0	0	0	9
Total Background	53	0	0	1	0	113
Site Generated Traffic	0	34	28	19	23	0
Total Future	53	34	28	20	23	113

Weekday PM Peak Hour

Traffic Component	Southbound Lincoln Road(Route 722) Through	Southbound Lincoln Road(Route 722) Left	Westbound Site Entrance Right	Westbound Site Entrance Left	Northbound Lincoln Road(Route 722) Right	Northbound Lincoln Road(Route 722) Through
Existing Traffic Volumes	85	1	0	0	0	50
Growth of Existing	8	0	0	0	0	4
Total Background	93	1	0	0	0	54
Site Generated Traffic	0	23	26	17	16	0
Total Future	93	24	26	17	16	54

Existing Levels of Service

Existing intersection levels of service were calculated based on the existing lane use and traffic control, the existing traffic volumes shown in Table 1, and the 2000 Highway Capacity Manual (HCM) capacity analysis methodology. The results are presented in Attachment B and summarized in Table 2.

A level of service (LOS) is an "A-B-C-D-E-F" grading system, whereby the quality of operation at an intersection can be identified. LOS's range from "A", best traffic operation, to "F", the poorest. A detailed description of LOS "A" through "F" is contained in Attachment C.

LOS "D" is the minimum acceptable level of service in Loudoun County, Virginia, according to the FSM.

As shown in Table 2, each of the critical movements at the study intersections currently operates at LOS "A" during both the AM and PM peak hour.

Background Traffic Growth

Annual background traffic growth along Lincoln Road (Route 722) was estimated at 8.9 percent per year, compounded annually, based on historical counts conducted by the Virginia Department of Transportation (VDOT).

Background Traffic Forecasts

Background peak hour traffic forecasts, without the Springdale Montessori School, were estimated based on the existing traffic counts and background traffic growth. The background traffic forecasts for 2008/2009 are shown in Table 1. This table also shows AM and PM total background peak hour traffic forecasts.

Background Future Levels of Service

Future peak hour intersection levels of service, without the Springdale Montessori School, were calculated based on the existing lane use and traffic control, the background traffic forecasts shown in Table 1, and the 2000 Highway Capacity Manual (HCM) capacity analysis methodology. The results are presented in Attachment D and summarized in Table 2.

As shown in Table 2, each of the critical movements at the study intersections would operate at LOS "A" during both the AM and PM peak hours under 2008 background conditions.

A-027

Table 2

Springdale Montessori School

Peak Hour Intersection Levels of Service

Intersection	Control	Approach/ Movement	Existing Conditions AM	Existing Conditions PM	2008/2009 Background AM	2008/2009 Background PM	2008/2009 Total Future AM	2008/2009 Total Future PM
1. Lincoln Road (Route 722)/ Site Entrance	STOP	WBLR	A [9.4]	A [0.0]	A [9.5]	A [0.0]	A [9.7]	A [9.3]
		SBLT	A [0.0]	A [0.1]	A [0.0]	A [0.1]	A [3.1]	A [1.6]

Site Trip Generation Analysis

The number of trips that would be generated by the Springdale Montessori School was estimated based on rates and/or equations included in the Institute of Transportation Engineers' Trip Generation, 7th Edition. These project trips are shown in Table 3.

The school is estimated to generate 104 AM peak hour trips (57 in and 47 out), 82 PM peak hour trips (39 in and 43 out), and 293 average daily trips upon completion and full attendance.

A trip generation comparison was made between the current zoning versus the proposed SPEX development program. The current zoning would allow for 4,500 square feet of restaurant use, which would generate the most trips of any permitted use under the current zoning. A restaurant use would generate approximately 52 AM peak hour trips, 49 PM peak hour trips, and 572 daily trips. Thus, the proposed development program would generate 52 (or 100 percent) more trips during the AM peak hour, 33 (or 67 percent) more trips during the PM peak hour, and 279 (or 49 percent) fewer daily trips than the current zoning.

Trip Distribution Analysis

The distribution of peak hour trips generated by the Springdale Montessori School were determined based on the existing traffic counts, local knowledge and engineering judgment. Given the character of the local roadway network in and around the village of Lincoln, vehicles have a number of options in approaching the site. Additionally, it is anticipated that the Montessori School will provide direction to the parents of students to bypass the Village of Lincoln if possible. Therefore, it is estimated that approximately sixty (60) percent of site traffic would approach the site from the north on Lincoln Road (Route 722), and forty (40) percent from the south on Lincoln Road (Route 722).

Site Traffic Assignments

The site-generated traffic volumes were assigned to the public roadway network according to the directional distribution described above. The resulting site traffic assignments are shown in Table 1.

Total Future Traffic Forecasts

The site traffic assignments shown in Table 1 were added to background traffic forecasts shown in Table 1 to yield total future traffic forecasts for project occupancy, 2008/2009, which are also shown in Table 1.

This table shows the AM peak hour and PM peak hour traffic forecasts.

A-029

Table 3

Springdale Montessori School

Site Trip Generation

Land Use Options	ITE [1] Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
Permitted										
Restaurant (High Turnover)	932	4,500	S.F.	27	25	52	30	19	49	572
Proposed										
Private School[2,3]	534	118	Students	57	47	104	39	43	82	293
	Permitted vs. Proposed			30	22	52	9	24	33	(279)
	Percent Permitted vs. Proposed					100%			67%	-49%

Notes: (1) Trip estimates based on rates and equations published in the Institute of Transportation Engineers Trip Generation, Seventh Edition.

(2) PM Peak hour reflects peak hour of generator which would occur before the commuter PM peak hour.

(3) ADT rate from ITE Land Use Code 536 (Private School K-12).

Total Future Levels of Service

Future peak hour intersection levels of service, with the Springdale Montessori School, were analyzed based on the existing lane use and traffic control, the total future traffic forecasts shown in Table 1, and the 2000 Highway Capacity Manual (HCM) capacity analysis methodology. The results are presented in Attachment E and summarized in Table 2.

As shown in Table 2, each of the critical movements at the study intersection would operate at LOS "A" during both the AM and PM peak hours under total future conditions.

Turn Lane Analysis

Further analysis was completed to determine the need for turn lanes at the Lincoln Road (Route 722)/Site Entrance intersection. A turn lane warrant analysis was completed using Figure C-1-8 for right turn lanes and Figures C-1-1.6 and C-1-1.7 for left turn lanes from the VDOT Roadway Design Manual. The results are presented in Attachment F, and Table 4. The site entrance was evaluated for 2008/2009 total future traffic conditions.

As summarized in Table 4, northbound Lincoln Road (Route 722) at the site entrance would require a right turn radius. A separate southbound left turn lane would not be required at the study location.

Conclusion

The development of the Springdale Montessori School would have minimal transportation impacts to the local roadway system and therefore no additional roadway improvements would be necessary.

Attachments:

A – Existing Traffic Counts
B – Existing Level of Service Calculations
C – Level of Service Description
D – 2008/2009 Background Future Level of Service Calculations
E – 2008/2009 Total Future Level of Service Calculations
F – Turn Lane Warrant Analysis

A-031

Table 4

Springdale Montessori School

Turn Lane Warrant Analysis Summary

	Intersection	Right Turn Lane[1]	Left Turn Lane[2]
1.	Lincoln Road (Route 722)/ Site Entrance	**Radius Required**	**Not Required**

Notes: (1) Based on Figure C-1-8 from VDOT's Roadway Design Manual.
(2) Based on Figures C-1-1.6 and C-1-1.7 from VDOT's Roadway Design Manual.

Attachment A

Existing Traffic Counts

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Springdale Montessori School	DATE:	6/19/2007	SOUTHBOUND ROAD:	Lincoln Road	
W & A JOB NO.:	3715	DAY:	Tuesday	NORTHBOUND ROAD:	Lincoln Road	
INTERSECTION:	Lincoln Rd.& Site Entrance	WEATHER:	Clear	WESTBOUND ROAD:	Site Entrance	
LOCATION:	Loudoun County,VA	COUNTED BY:	Richard	EASTBOUND ROAD:		
		INPUTED BY:	agan			

Time Period	Turning Movements																					Total	PHF	Time Period
	Southbound Lincoln Road				Westbound Site Entrance				Northbound Lincoln Road				Eastbound 0				North & South	East & West						
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total								
AM																								
6:00-6:15	0	1	0	1	0	0	0	0	0	15	0	15	0	0	0	0	16	0	16		6:00-6:15
6:15-6:30	0	3	0	3	0	0	0	0	0	14	0	14	0	0	0	0	17	0	17		6:15-6:30
6:30-6:45	0	2	0	2	0	0	0	0	0	12	0	12	0	0	0	0	14	0	14		6:30-6:45
6:45-7:00	0	4	0	4	0	0	0	0	0	10	0	10	0	0	0	0	14	0	14		6:45-7:00
7:00-7:15	0	7	0	7	0	0	0	0	0	12	0	12	0	0	0	0	19	0	19		7:00-7:15
7:15-7:30	0	8	0	8	0	0	0	0	0	15	0	15	0	0	0	0	23	0	23		7:15-7:30
7:30-7:45	0	9	0	9	0	0	0	0	0	25	0	25	0	0	0	0	34	0	34		7:30-7:45
7:45-8:00	0	17	0	17	0	0	0	0	0	16	0	16	0	0	0	0	33	0	33		7:45-8:00
8:00-8:15	0	9	0	9	0	0	0	0	0	34	0	34	0	0	0	0	43	0	43		8:00-8:15
8:15-8:30	0	9	0	9	0	0	0	0	0	30	0	30	0	0	0	0	39	0	39		8:15-8:30
8:30-8:45	0	14	0	14	0	0	1	1	0	24	0	24	0	0	0	0	38	1	39		8:30-8:45
8:45-9:00	0	11	0	11	0	0	0	0	0	21	0	21	0	0	0	0	32	0	32		8:45-9:00
3 Hour Totals	**0**	**94**	**0**	**94**	**0**	**0**	**1**	**1**	**0**	**228**	**0**	**228**	**0**	**0**	**0**	**0**	**322**	**1**	**323**		
1 Hour Totals																					
6:00-7:00	0	10	0	10	0	0	0	0	0	51	0	51	0	0	0	0	61	0	61	0.90	6:00-7:00
6:15-7:15	0	16	0	16	0	0	0	0	0	48	0	48	0	0	0	0	64	0	64	0.84	6:15-7:15
6:30-7:30	0	21	0	21	0	0	0	0	0	49	0	49	0	0	0	0	70	0	70	0.76	6:30-7:30
6:45-7:45	0	28	0	28	0	0	0	0	0	62	0	62	0	0	0	0	90	0	90	0.66	6:45-7:45
7:00-8:00	0	41	0	41	0	0	0	0	0	68	0	68	0	0	0	0	109	0	109	0.80	7:00-8:00
7:15-8:15	0	43	0	43	0	0	0	0	0	90	0	90	0	0	0	0	133	0	133	0.77	7:15-8:15
7:30-8:30	0	44	0	44	0	0	0	0	0	105	0	105	0	0	0	0	149	0	149	0.87	7:30-8:30
7:45-8:45	0	49	0	49	0	0	1	1	0	104	0	104	0	0	0	0	153	1	154	0.90	7:45-8:45
8:00-9:00	0	43	0	43	0	0	1	1	0	109	0	109	0	0	0	0	152	1	153	0.89	8:00-9:00
AM Peak 7:45-8:45	**0**	**49**	**0**	**49**	**0**	**0**	**1**	**1**	**0**	**104**	**0**	**104**	**0**	**0**	**0**	**0**	**153**	**1**	**154**	**0.90**	**AM Peak 7:45-8:45**
PM																					
4:00-4:15	0	19	0	19	0	0	0	0	0	13	0	13	0	0	0	0	32	0	32		4:00-4:15
4:15-4:30	0	18	1	19	0	0	0	0	0	8	0	8	0	0	0	0	27	0	27		4:15-4:30
4:30-4:45	0	22	0	22	0	0	0	0	0	20	0	20	0	0	0	0	42	0	42		4:30-4:45
4:45-5:00	0	26	0	26	0	0	0	0	0	9	0	9	0	0	0	0	35	0	35		4:45-5:00
5:00-5:15	0	19	0	19	0	0	0	0	0	5	0	5	0	0	0	0	24	0	24		5:00-5:15
5:15-5:30	0	12	0	12	0	0	0	0	0	8	0	8	0	0	0	0	20	0	20		5:15-5:30
5:30-5:45	0	16	0	16	0	0	0	0	0	12	0	12	0	0	0	0	28	0	28		5:30-5:45
5:45-6:00	0	15	0	15	0	0	0	0	0	17	0	17	0	0	0	0	32	0	32		5:45-6:00
6:00-6:15	0	20	0	20	0	0	0	0	0	13	0	13	0	0	0	0	33	0	33		6:00-6:15
6:15-6:30	0	14	0	14	0	0	0	0	0	9	0	9	0	0	0	0	23	0	23		6:15-6:30
6:30-6:45	0	14	0	14	0	0	0	0	0	12	0	12	0	0	0	0	26	0	26		6:30-6:45
6:45-7:00	0	16	0	16	0	0	0	0	0	9	0	9	0	0	0	0	25	0	25		6:45-7:00
3 Hour Totals	**0**	**211**	**1**	**212**	**0**	**0**	**0**	**0**	**0**	**135**	**0**	**135**	**0**	**0**	**0**	**0**	**347**	**0**	**347**		
1 Hour Totals																					
4:00-5:00	0	85	1	86	0	0	0	0	0	50	0	50	0	0	0	0	136	0	136	0.81	4:00-5:00
4:15-5:15	0	85	1	86	0	0	0	0	0	42	0	42	0	0	0	0	128	0	128	0.76	4:15-5:15
4:30-5:30	0	79	0	79	0	0	0	0	0	42	0	42	0	0	0	0	121	0	121	0.72	4:30-5:30
4:45-5:45	0	73	0	73	0	0	0	0	0	34	0	34	0	0	0	0	107	0	107	0.76	4:45-5:45
5:00-6:00	0	62	0	62	0	0	0	0	0	42	0	42	0	0	0	0	104	0	104	0.81	5:00-6:00
5:15-6:15	0	63	0	63	0	0	0	0	0	50	0	50	0	0	0	0	113	0	113	0.86	5:15-6:15
5:30-6:30	0	65	0	65	0	0	0	0	0	51	0	51	0	0	0	0	116	0	116	0.88	5:30-6:30
5:45-6:45	0	63	0	63	0	0	0	0	0	51	0	51	0	0	0	0	114	0	114	0.86	5:45-6:45
6:00-7:00	0	64	0	64	0	0	0	0	0	43	0	43	0	0	0	0	107	0	107	0.81	6:00-7:00
PM Peak 4:00-5:00	**0**	**85**	**1**	**86**	**0**	**0**	**0**	**0**	**0**	**50**	**0**	**50**	**0**	**0**	**0**	**0**	**136**	**0**	**136**	**0.81**	**PM Peak 4:00-5:00**

A-034

Attachment B

Existing Level of Service Calculations

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	1	0	104	0	0	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	113	0	0	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	166	113			113	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166	113			113	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	824	940			1476	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	113	53
Volume Left	1	0	0
Volume Right	0	0	0
cSH	824	1700	1476
Volume to Capacity	0.00	0.07	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	9.4	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.4	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

A-036

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	50	0	1	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	54	0	1	92
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	149	54			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	149	54			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	843	1013			1551	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	54	93
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1551
Volume to Capacity	0.00	0.03	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		

A-037

Attachment C

Level of Service Descriptions

A-038

Level of Service Criteria for Stop Sign Controlled Intersections

The level of service criteria are given in Table 17-2. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. . . .

Table 17-2. Level of Service Criteria for TWSC Intersections

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (sec/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Average total delay less than 10 sec/veh is defined as Level of Service (LOS) A. Follow-up times of less than 5 sec have been measured when there is no conflicting traffic for a minor street movement, so control delays of less than 10 sec/veh are appropriate for low flow conditions. To remain consistent with the AWSC intersection analysis procedure described later in this chapter, a total delay of 50 sec/veh is assumed as the break point between LOS E and F.

The proposed level of service criteria for TWSC intersections are somewhat different from the criteria used in Chapter 16 for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, several driver behavior considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, where drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized than signalized intersections. For these reasons, it is considered that the total delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. . . .

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queueing on the minor approaches. The method, however, is based on a constant critical gap size - that is, the critical gap remains constant, no matter how long the side street motorist waits. LOS F may also appear in the form of side street vehicles' selecting smaller-than-usual gaps. In such cases, safety may be a problem and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior. The latter is more difficult to observe on the field than queueing, which is more obvious.

Source: Highway Capacity Manual, 2000. Transportation Research Board, National Research Council

Attachment D

2008/2009 Background Future Level of Service Calculations

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	1	0	113	0	0	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	123	0	0	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	180	123			123	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180	123			123	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	809	928			1464	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	123	58
Volume Left	1	0	0
Volume Right	0	0	0
cSH	809	1700	1464
Volume to Capacity	0.00	0.07	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

A-041

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	54	0	1	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	59	0	1	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	162	59			59	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162	59			59	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	828	1007			1545	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	59	102
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1545
Volume to Capacity	0.00	0.03	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.1
Approach LOS	A		

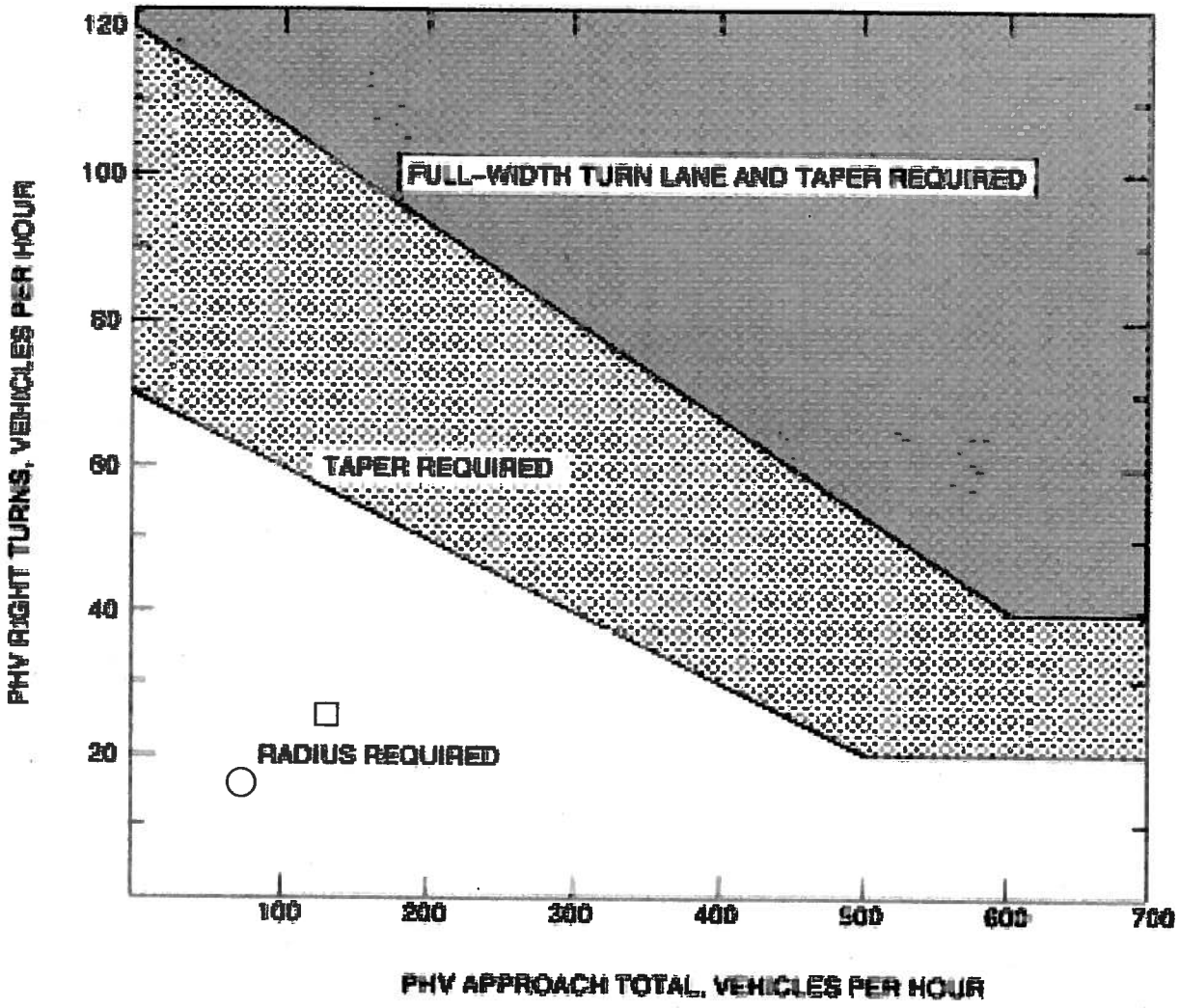
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	9.0%	ICU Level of Service	A
Analysis Period (min)	15		

A-042

Attachment E

2008/2009 Total Future Level of Service Calculations

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE C-1-8



	Lincoln Road(Route 722)/Site Entrance *Northbound Right-Turn Lane Evaluation*	
	2008/2009 Total Future	
	AM	PM
Approach Total	136	70
Right-Turns	23	16
Symbol	□	○

A-044

WARRANT FOR LEFT-TURN LANES ON TWO-LANE HIGHWAYS

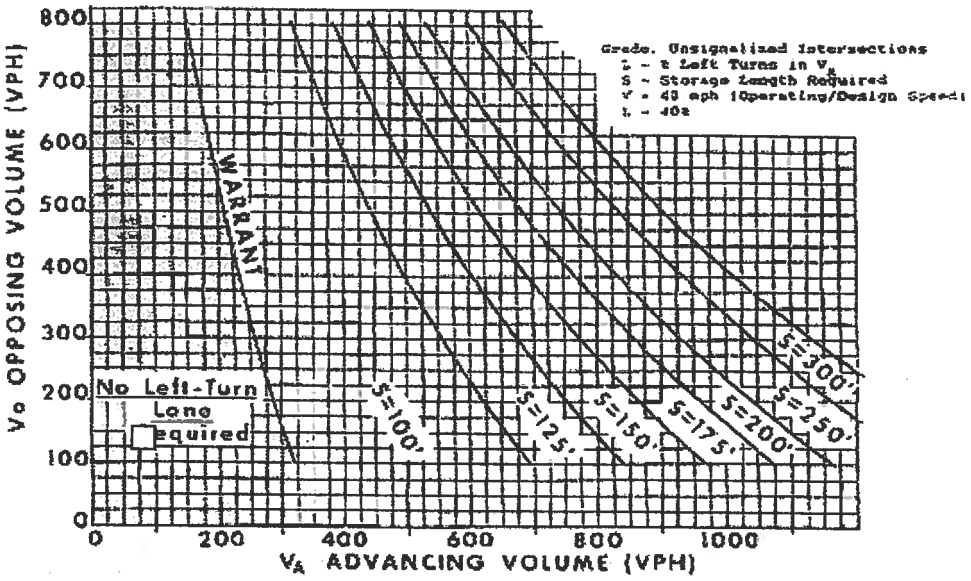


FIGURE C-1-1.7

2008/2009 Total Future	**Lincoln Road(Road 722)/Site Entrance** *Southbound Left-Turn Lane Evaluation*
	AM
V_A = Advancing Volume	87
V_O = Opposing Volume	136
Left-Turns	34
Symbol	☐

WARRANT FOR LEFT-TURN LANES ON TWO-LANE HIGHWAYS

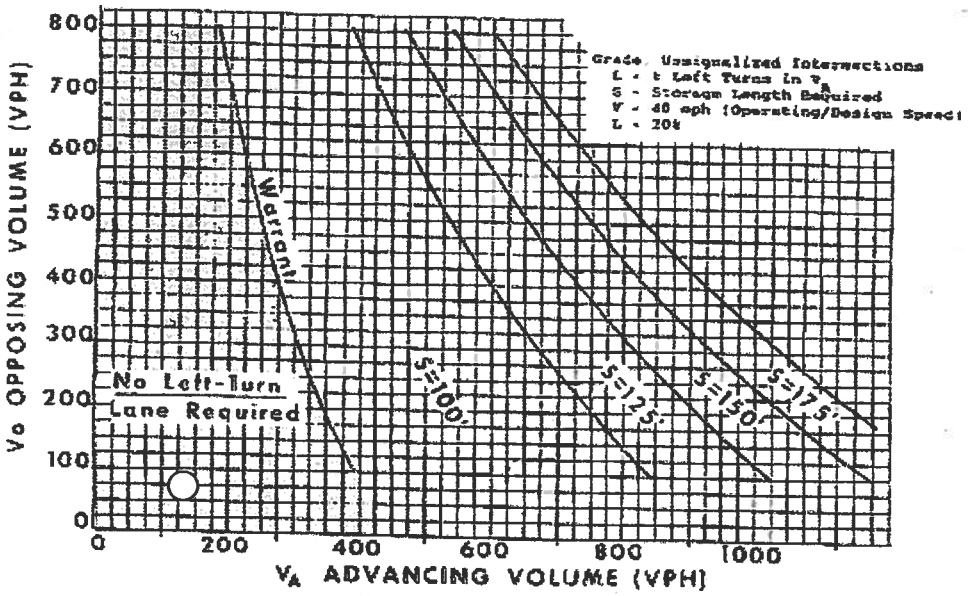


FIGURE C-1-1.5

2008/2009 Total Future	**Lincoln Road(Road 722)/Site Entrance** *Southbound Left-Turn Lane Evaluation*
	PM
V_A = Advancing Volume	117
V_O = Opposing Volume	70
Left-Turns	24
Symbol	○

County of Loudoun

Office of Transportation Services

MEMORANDUM

DATE: March 25, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: Art Smith, Senior Coordinator, Planning and Development

SUBJECT: **SPEX 2007-0048 Springdale Montessori School**
2nd Referral

This referral will serve to update the status of the comments in the initial January 22, 2008 OTS referral on this SPEX application based on the applicant's responses dated February 21, 2008. OTS also reviewed a revised traffic study prepared by Wells & Associates dated February 20, 2008.

OTS Comments, Applicant Response, Issue Status

Comment 1: The traffic volumes in the applicant's traffic study do not appear to have been taken on a regular school day as they should been. Please correct as appropriate.

Response: New counts have been taken and included with a revised report.

Status: Twenty-four hour traffic counts were taken on Lincoln Road at the site entrance on February 5-7, 2008 (Tuesday through Thursday). The highest volume for the February counts was on Tuesday, February 5, 2008. This data indicates that the peak hours occurred between 8:00 and 9:00 AM and 4:15 and 5:15 PM. The June 2007 count showed that Lincoln Road (Route 772) carried 154 AM peak hour trips and 136 PM peak hour trips in the vicinity of the site. Sixty-eight (68) percent of all motorists travel north in the morning and sixty-three (63) percent travel south in the evening. The February counts did not show much variation with 148 AM peak hour trips and 161 PM peak hour trips. Sixty-five (65) percent of the motorists travel north in the morning and fifty-seven (57) percent travel south in the evening. **Issue resolved**.

Comment 2: The applicant's buildout forecast is 2008/2009. It is clear the school will not be operational in 2008. Given the steps needed to begin school operations (if approved) it appears a realistic buildout year is 2010. Please respond.

Response: The applicants are renovating their existing residence to house the school. No new school or structure for the school is being built. Opening day is anticipated to be fall, 2009. Full attendance is anticipated to occur by year 2013. Appropriate revisions in the traffic study have been completed.

A-047

Status: **Issue resolved**.

Comment 3: The most appropriate LOS evaluation for this site would be link level service based on the current typical section for Route 722. Please provide.

Response: A link level of service analysis has been completed in accordance with the FSM.

Status: Yes, a link LOS analysis has been completed. Attached are the following traffic volumes and LOS documentations:

1. Existing, Background (2003) and Total Forecasted (2013) Peak Hour Traffic Volumes;
2. Existing, Background (2013) and Total Forecasted (2013) Peak Hour Intersection LOS;
3. Total forecasted (2013) link LOS for the two lane section of Route 722 proximate to the site. Link LOS "B" is forecasted for both AM and PM peak hours. Note, nine foot wide travel lanes and no shoulders were assumed in the analysis. Also note the methodology used cannot analyze LOS on the one lane bridges on Route 722. These bridges will be the major traffic constraints in the vicinity of the proposed school.

Comment 4: The applicant should provide a dedication of right-of-way 25 feet from the existing center line of Route 722 for future road improvements.

Response: Existing right-of-way of 25 feet is already provided. Dimensions of 25 feet have been added to this plat.

Status: **Issue resolved**.

Comment 5: Entrance improvements consistent with VDOT requirements should be provided.

Response: Agreed, a standard VDOT entrance has been shown on the Special Exception Plat. Further requirements, including sight distances will be addressed at the site plan stage.

Status: **Issue resolved**.

Comment 6: Any turn lane improvements required by VDOT should be provided.

Response: VDOT has not requested any turn lane improvements at this time. In addition, the traffic study completed left and right turn lane warrant analyses in accordance with VDOT requirements. The analyses indicate separate turn lanes are not required.

Status: Comment Number 1 in VDOT's referral of March 5, 2008 does mention a left turn lane as follows:

Based on future traffic volumes, VDOT has concerns with the one lane stream crossing approximately 150 feet from the proposed entrance location. At full build out of the school and at the higher future through traffic volumes, there could be a queuing problem which causes vehicles to be queued in the narrow one lane segment of Route 722. I would recommend either providing a left turn lane into the site or providing some improvements to Route 722 which would widen the roadway to two functional lanes in the vicinity of and across the stream crossing. The majority of the conflicts will be in the AM peak hour. The PM peak hour of the school should be prior to the roadway peak hour, making the conflicts minimal in the PM.

OTS shares VDOT's concerns.

Comment 7: If the link LOS evaluation determines current lane width on Route 722 is not adequate to service the school, appropriate frontage improvements should be provided.

Response: The link LOS analysis indicates that Lincoln Road (Route 722) operates at a LOS "B" or better during total future 2013 traffic conditions.

Status: Link LOS is adequate on two lane portions of Route 722. The problem is the one lane bridge a short distance from the site's entrance.

Comment 8: OTS is interested in learning the views of Comprehensive Planning and local residents living along the road in the provision of a multi-purpose trail along Route 722. We have no recommendation at this time.

Response: No response is required.

Status: This reviewer has read the "Village of Lincoln Charrette Summary Notes, February 9, 2007" and finds it to be an intelligent document with many pragmatic and useful traffic calming recommendations. Hopefully a traffic calming program will be implemented in the Village of Lincoln. No community support is seen for a multi-purpose trail. An appropriate sidewalk would be desirable.

Conclusion

A meeting with the applicant and VDOT is recommended to consider appropriate solutions to the one lane bridge close to the site's entrance.

AJS/llm
Attachments
cc: Andy Beacher, Assistant Director/Highway Division Chief
Chuck Acker, Transportation Operations Engineer

A-049

Table 1
Springdale Montessori School
Lincoln Road (Route 722)/Site Entrance
Traffic Forecast Summary

Weekday AM Peak Hour

Traffic Component	Southbound Lincoln Road(Route 722) Through	Southbound Lincoln Road(Route 722) Left	Westbound Site Entrance Right	Westbound Site Entrance Left	Northbound Lincoln Road(Route 722) Right	Northbound Lincoln Road(Route 722) Through
Existing Traffic Volumes	51	0	0	1	0	96
Growth of Existing	75	0	0	0	0	142
Total Background	126	0	0	1	0	238
Site Generated Traffic	0	34	28	19	23	0
Total Future	126	34	28	20	23	238

Weekday PM Peak Hour

Traffic Component	Southbound Lincoln Road(Route 722) Through	Southbound Lincoln Road(Route 722) Left	Westbound Site Entrance Right	Westbound Site Entrance Left	Northbound Lincoln Road(Route 722) Right	Northbound Lincoln Road(Route 722) Through
Existing Traffic Volumes	90	1	0	0	0	70
Growth of Existing	133	0	0	0	0	104
Total Background	223	1	0	0	0	174
Site Generated Traffic	0	23	26	17	16	0
Total Future	223	24	26	17	16	174

Average Daily Trips

Traffic Component	
Existing (2008) Counts	1,534 Trips
Background Growth (48%)	720 Trips
Site Generated Trips (North of Entrance at 60%)	176 Trips
Total 2013 ADT	2,430 Trips

ATTACHMENT 1

Table 2

Springdale Montessori School

Peak Hour Intersection Levels of Service[1,2]

Intersection/Link	Control	Approach/ Movement	Existing Conditions AM	Existing Conditions PM	2013 Background AM	2013 Background PM	2013 Total Future AM	2013 Total Future PM
1. Lincoln Road (Route 722)/ Site Entrance	STOP	WBLR	A [9.3]	A [0.0]	B [10.9]	A [0.0]	B [11.1]	B [10.7]
		SBLT	A [0.0]	A [0.1]	A [0.0]	A [0.0]	A [1.9]	A [0.9]
2. Lincoln Road (Route 722) -North Link			A (0.07)	A (0.09)	B (0.18)	B (0.17)	B (0.16)	B (0.19)

Notes:

(1) Numbers in brackets [ ] indicate delay in seconds per vehicle for stop-controlled intersections.

(2) Numbers in parentheses ( ) indicate volume over capacity (v/c) ratio for link.

ATTACHMENT 2

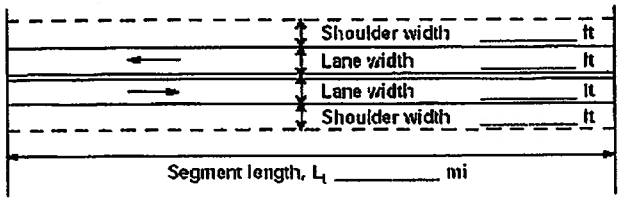
A-051

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	WC	Highway	Lincoln Rd (Rt 722)
Agency or Company	Wells + Associates, Inc.	From/To	Rt 725-Rt 709
Date Performed	2/19/08	Jurisdiction	Loudoun County, VA
Analysis Time Period	AM Peak Hour	Analysis Year	Total Future

Project Description: 3715-Lincoln Montessori School

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	426 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.90
No-passing zone	20
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ mi	15

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	518
v_p * highest directional split proportion[2] (pc/h)	321

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	6.4 mi/h
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	mi/h	Adj. for access points, f_A (Exhibit 20-6)	3.8 mi/h
		Free-flow speed, FFS ($FSS=BFFS-f_{LS}-f_A$)	34.8 mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.6
Average travel speed, ATS (mi/h) $ATS=FFS-0.00776v_p-f_{np}$	29.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	509
v_p * highest directional split proportion[2] (pc/h)	316
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	36.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.7
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	47.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	B
Volume to capacity ratio, v/c=V_p/ 3,200	0.16
Peak 15-min veh-miles of travel, VMT_{15} (veh- mi)= $0.25L_t(V/PHF)$	71

ATTACHMENT 3

A-052

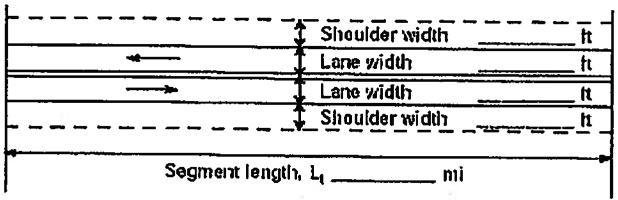
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V^*L_t	256
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	2.4
Notes	
1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.	

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*WC*	Highway	*Lincoln Rd (Rt 722)*
Agency or Company	*Wells + Associates, Inc.*	From/To	*Rt 725-Rt 709*
Date Performed	*2/19/08*	Jurisdiction	*Loudoun County, VA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Total Future*

Project Description: *3715-Lincoln Montessori School*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	447 veh/h
Directional split	55 / 45
Peak-hour factor, PHF	0.81
No-passing zone	20
% Trucks and Buses, P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	15

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T$-1)+$P_R(E_R$-1))	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	604
v_p * highest directional split proportion[2] (pc/h)	332

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	mi/h	Base free-flow speed, $BFFS_{FM}$	45.0 mi/h
Observed volume, V_f	veh/h	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	6.4 mi/h
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	mi/h	Adj. for access points, f_A (Exhibit 20-6)	3.8 mi/h
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	34.8 mi/h

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.6
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	28.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ $P_T(E_T$-1)+$P_R(E_R$-1))	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	593
v_p * highest directional split proportion[2] (pc/h)	326
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	40.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	52.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	B
Volume to capacity ratio, v/c=V_p/ 3,200	0.19
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	83

A-054

Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V^*L_t	*268*
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	*2.9*
Notes	
1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F. 2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.	

County of Loudoun

Office of Transportation Services

MEMORANDUM

DATE: June 20, 2008

TO: Mike Elabarger, Project Manager, Department of Planning

FROM: Art Smith, Senior Coordinator, Planning and Development

SUBJECT: **SPEX 2007-0048**
Springdale Montessori School
Third Referral

This referral will serve to update the status of the OTS issues concerning this application based on the responses in the June 6, 2008 letter from Robert E. Sevila.

Comment 1: Timing of traffic counts
Status: Previously resolved

Comment 2: Project implementation and buildout
Status: Previously resolved

Comment 3: Link level LOS
Status: Previously resolved

Comment 4: Right-of-way dedication for Route 722
Status: Previously resolved

Comment 5: Entrance improvements consistent with VDOT requirements should be provided.

Response: Agreed. A standard VDOT entrance has been shown on the special exception plat. Further requirements, including sight distances will be addressed at the site plan stage.

Status: The entrance shown on the plat appears to meet VDOT requirements. The applicant and VDOT have agreed to make final adjustments, if required, at the site plan stage. Issue resolved.

A-056

Comment 6: Any turn lane improvements required by VDOT should be provided.

Response: VDOT has not requested any turn lane improvements at this time. In addition, the traffic study completed left and right turn warrant analyses in accordance with VDOT requirements. The analyses indicate separate turn lanes are not required.

Status: VDOT did not request any turn lanes at our June 5, 2008 meeting with the applicant. VDOT has also not requested turn lanes in their final referral. Issue resolved.

Comment 7: If the link LOS evaluation determines current lane width on Route 722 is not adequate to service the school, appropriate frontage improvements should be provided.

Status: Link analysis showed LOS "B" on Route 722 south of the bridge at the property's boundary line. A field review of Route 722 physical conditions south of the bridge has been conducted by the applicant's engineer and a proposal for some widening associated with a VDOT standard entrance submitted to VDOT. The proposal also includes some striping changes and installation of a stop sign at the site's entrance and a school entrance sign south of the entrance. No changes are proposed to the existing bridge. Issue resolved.

Comment 8: Multi-purpose trail or sidewalk along Route 722.

Status: Widening of the existing bridge is not recommended by OTS. As such, a trail or sidewalk along the site's frontage would have no utility. Issue resolved.

Conclusion

There are no transportation issues which would preclude approval of this application.

cc: Andy Beacher, Assistant Director/Highway Division Chief

A-057

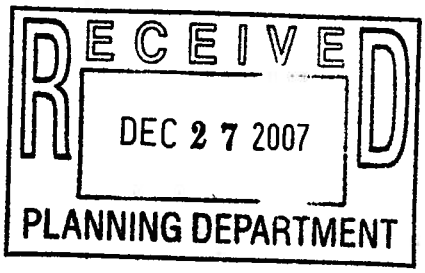
COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

DAVID S. EKERN, P.E.
COMMISSIONER

14685 Avion Parkway
Chantilly, VA 20151
(703) 383-VDOT (8368)

December 20, 2007



Mr. Mike Elabarger **MSC#62**
County of Loudoun
Department of Planning
1 Harrison Street, S.E.
Leesburg, Virginia 20177-7000

Re: SPEX 2007-0048 Springdale Montessori School
Loudoun County

Dear Mr. Elabarger:

I have reviewed the above plan as requested in your submittal dated December 11, 2007, and received on December 17, 2007. The following comments are offered:

1. The total ADT needs to be provided to evaluate the impact along Lincolnia Road. This application may be increasing the total ADT to the point it requires a Chapter 527 review. The County needs to evaluate whether or not this application falls under the 527 requirements. Keep in mind the site plan requirements could kick in even if this application does not fall under the phased in requirements.

2. The number of trips seems low for 118 students. Even with some vehicles carrying two students, the number is still not half of the number of students. I did not see where buses were indicated to be providing transportation to the school.

3. Sight distance for the new entrance will be required to be demonstrated on the site plans.

If you have any questions, please call me at (703)383-2424.

Sincerely,

Kevin Nelson

Kevin Nelson
Transportation Engineer

cc: Mr. Imad Salous
spex2007-048se1SpringdaleMontessoriSchool12-20-07ME

A-058

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

DAVID S. EKERN, P.E.
COMMISSIONER

14685 Avion Parkway
Chantilly, VA 20151
(703) 383-VDOT (8368)

March 5, 2008

Mr. Mike Elabarger **MSC#62**
County of Loudoun
Department of Planning
1 Harrison Street, S.E.
Leesburg, Virginia 20177-7000

Re: SPEX 2007-0048 Springdale Montessori School
Loudoun County

Dear Mr. Elabarger:

I have reviewed the above plan as requested in your submittal dated February 22, 2008, and received on February 28, 2007. The following comments are offered:

1. Based on the future traffic volumes, I have concerns with the one lane stream crossing approximately 150' from the proposed entrance location. At full build out of the school and at the higher future through traffic volumes, there could be a queuing problem which causes vehicles to be queued in the narrow one lane segment of Rt. 722. I would recommend either providing a left turn lane into the site or providing some improvements to Rt. 722 which would widen the roadway to two functional lanes in the vicinity of and across the stream crossing. The majority of the conflicts will be in the AM peak hour. The PM peak hour of the school should be prior to the roadway peak hour, making the conflicts minimal in the PM.

2. *The number of trips seems low for 118 students. Even with some vehicles carrying two students, the number is still not half of the number of students.* The applicant only answered the second half of this comment regarding whether or not buses would be used.

If you have any questions, please call me at (703)383-2424.

Sincerely,

Kevin Nelson

Kevin Nelson
Transportation Engineer

cc: Mr. Imad Salous
spex2007-048se2SpringdaleMontessoriSchool3-5-08ME

A-059

From: Heidi Siebentritt
To: Mike Elabarger
Date: 1/30/2008 9:16 AM
Subject: Springdale

CC: Kelly Williams

Hi Mike
I've spoken with Kelly regarding her referral and her reference to the Historic District and the need for HDRC review should any exterior alteration of the structures on the property, demolition of existing structures or any new construction be proposed. There is also an approved waiver for the archaeological survey. So, in my view, there is no need for additional referral comments from Community Information/Outreach. Thanks.

Heidi

Heidi E. Siebentritt
Historic Preservation Planner
Department of Planning
3rd Floor
1 Harrison Street, SE
Leesburg, VA 20177
(703) 777-0246

A-060

Loudoun County Health Department

P.O. Box 7000
Leesburg VA 20177-7000

Environmental Health
Phone: 703 / 777-0234
Fax: 703 / 771-5023

Community Health
Phone: 703 / 777-0236
Fax: 703 / 771-5393

December 17, 2007

MEMORANDUM TO: Mike Elabarger, Project Manager
Department of Planning

FROM: Joseph E. Lock
Rural Section Supervisor
Division Of Environmental Health

SUBJECT: **SPEX 2007-0048, Springdale Montessori School**
LCTM 45-((1))-2, PIN 455173739

The above referenced project meets the requirements of Section 1245.10 of the LSDO for:

		Yes	No	N/A
a.	Proposed Drainfield Sites	____	____	X
b.	Proposed Wells	____	____	X

The locations on the plat, submitted by Huntley, Nyce & Associates, Ltd. dated October 31, 2007, are correct as shown:

a.	Wells (existing and proposed)	X	____	____
b.	Drainfield Sites	X	____	____

Health Department staff recommends: Approval____ Denial__
Approval with conditions_X_

Items that are incorrect/deficient are listed on the attached page.

Attachments Yes __X____ No_____

If further information or clarification on the above project is required, please contact me at (703)771-5800.

JEL/JDF/jel JDF
C:SpringdaleMontessoriSchool.Referral

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

A-061

ATTACHMENT

The well was originally drilled to support a boarding school in 1987. The Office of Drinking Water has provided recommendations to the applicant that must be completed to bring the well and the water system up to current standards.

The existing drainfield was installed in 1989 for a design use of 12,215 gallons per week. The proposed use of 118 students does not appear to exceed the design capacity. An evaluation of the system was completed in June of 2007 by this office with no failure of the system observed. Clarification is requested for the total number of bedrooms to remain and/or proposed at the facility in addition to the proposed use.

The renovation of the existing structure will require the necessary permits from the Health Department concerning water and sewage disposal. Prior to obtaining the necessary permits, an engineer will need to design the components required to serve the structure. The structure, if converted to a living space, will require additional design information. The proposal cannot exceed the design use of 12,215 gallons per week as allowed in the original permit.

Prior to obtaining a food permit, the owner must submit a completed plan review and meet all requirements for the State and County.

The spring house should be properly abandoned as specified in the Special Exception documentation.

April 22, 2008

MEMORANDUM TO: Mike Elabarger, Project Manager MSC 60A
Department of Planning

FROM: Joseph E. Lock MSC 68
Rural Section Supervisor
Division Of Environmental Health

SUBJECT: **SPEX 2007-0048, Springdale Montessori School**
LCTM 45-((10))-2, PIN 455173739, Second Submission

The above referenced project meets the requirements of Section 1245.10 of the LSDO for:

		Yes	No	N/A
a.	Proposed Drainfield Sites	_____	_____	X
b.	Proposed Wells	_____	_____	X

The locations on the plat, submitted by Huntley, Nyce & Associates, Ltd. dated October 31, 2007, are correct as shown:

a.	Wells (existing and proposed)	X	_____	____
b.	Drainfield Sites	X	_____	____

Health Department staff recommends: Approval____ Denial__
Approval with conditions_X_

Items that are incorrect/deficient are listed on the attached page.

Attachments Yes __X____ No_____

If further information or clarification on the above project is required, please contact me at (703)771-5800.

JEL/JDF/jel
C:SpringdaleMontessoriSchool2.Referral

A-063

ATTACHMENT

The Health Department can recommend approval of the applicant's request for special exception use for a school and/or daycare, but wishes to make the following comments to the applicant. These comments are to make them aware of the possibility of future permits that would have to be acquired.

The well was originally drilled to support a boarding school in 1987. The Office of Drinking Water has provided recommendations to the applicant that must be completed to bring the well and the water system up to current standards.

The existing drainfield was installed in 1989 for a design use of 12,215 gallons per week. The proposed use of 118 students does not appear to exceed the design capacity. An evaluation of the system was completed in June of 2007 by this office with no failure of the system observed. One bedroom is proposed to remain at the facility in addition to the proposed use.

The renovation of any existing structure that is currently not connected to the existing drainfield will require the necessary permits from the Health Department concerning water and sewage disposal. Prior to obtaining the necessary permits, a professional engineer will need to design the components required to serve the structure. Any existing structure, if converted to a living space, will require additional design information. The proposal cannot exceed the design use of 12,215 gallons per week as allowed in the original permit.

Prior to obtaining a food permit, the owner must submit a completed plan review and meet all requirements for the State and County.

The spring should be properly abandoned as specified in the Special Exception documentation.

A-064

Loudoun County, Virginia

Department of Fire, Rescue and Emergency Management

803 Sycolin Road, Suite 104 Leesburg, VA 20175
Phone 703-777-0333 Fax 703-771-5359

Memorandum

To: Mike Elabarger, Project Manager
From: Maria Figueroa Taylor, Fire-Rescue Planner
Date: January 24, 2008
Subject: Springdale Montessori School
SPEX 2007-0048

Thank you for the opportunity to review the above-captioned application. The Fire and Rescue Planning Staff is not opposed to the application as proposed. If you have any questions or need additional information, please contact me at 703-777-0333.

C: Project file